SEMMELWEIS UNIVERSITY
Directorate of Security Service

Director
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Semmelweis University – Sustainability report 2021

2022 oktober

Contents

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Summary

Every citizens of Semmelweis University are committed to environmental protection and contribute to the performance of quality and environmentally conscious education, research, innovation and medical activities.

The management of the University is also committed to complying with environmental regulations and laws, supports the necessary developments to improve environmental performance, and provides the resources for the implementation of those developments.

The strategic goals were recently defined in the **Green University Program** and in **the University's Climate Protection Action Plan**.

The environmental achievements presented in this document serve as a starting point for the development of the University's medium- and long-term sustainability strategy. We consider the year 2021 as the base year, against which we will measure the environmental performance in the following years, and the developments and investments that advance sustainability, can be determined based on these indicators.

The sustainable development goals (SDGs), which were recorded in the sustainable development framework and were adopted by the UN in 2015, designate the directions of responsible action in order to solve the most urgent problems threatening humanity and the Earth. The 17 main goals and 169 sub-goals of the framework are what must be kept in mind in order to achieve them by 2030.

These 17 main goals have been included in 7 major pilars, according to which we give an account of the University's environmental performance.

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The 7 major pilars

The 17 main goals defined in the sustainable development framework can be classified into 7 major pilars or categories, in some cases one goal appears in more than one categories. These categories form the framework of the Report, along which we present the University's environmental performance.

The 7 categories are the following:

- Setting and infrastucture
- Energy and climate change
- Waste management
- Water management
- Transportation
- Education and research
- Well-being

The setting and infrastructure provides a general picture of the University's green environment.

The next and perhaps the most important category presents the University's energy consumption and how much attention it pays to issues related to climate change. We cover the use of energy-saving devices, the ratio of automated-intelligent buildings, the use of renewable energy sources, the emission of greenhouse gases and the presentation of programs to reduce this, energy savings.

Waste management and, within it, the effort to utilize it are the main factors in creating a sustainable environment. The activities of the university citizens and the operation of the University involve the production of enormous amounts of waste, which should be handled as far forward as possible in the waste hierarchy. Striving to reuse your materials, composting green waste, reducing paper use, and looking for alternative solutions for hazardous materials all serve to improve your environmental performance.

The University's water management is less emphasized, thanks to the country's favorable conditions and significant water resources, but it is a very important point of sustainable resource use on a global level.

Transportation plays an important role in reducing the carbon footprint. It is essential that the University supports the use of public transport and zero-emission vehicles, reducing the use of private vehicles as much as possible.

Education and research can contribute in many ways to improving environmental performance and making the University more sustainable.

A number of measures serve the well-being of employees and students. As a health care provider, special attention is paid to the health of university citizens, screening tests and medical consultation options are available. Many free or discounted cultural and sports programs complement the welfare measures.

Setting and infrastructure

Most of the University's buildings and campus sites are located in downtown Budapest, in a metropolitan, densely built-up environment, which determines the infrastructure. A significant part of the green areas belonging to the buildings are parks, and there is no forest vegetation in the university area. About **24%** of the total area can be considered as actual **green space** (parks, flower beds, grassy open areas between buildings, green roofs, etc.).

Green spaces on campus

The total floor area of the University is approximately 236.000 m^2. The built-up floor area is ~104.000 m^2. The total area of the buildings is 312.000 m^2.

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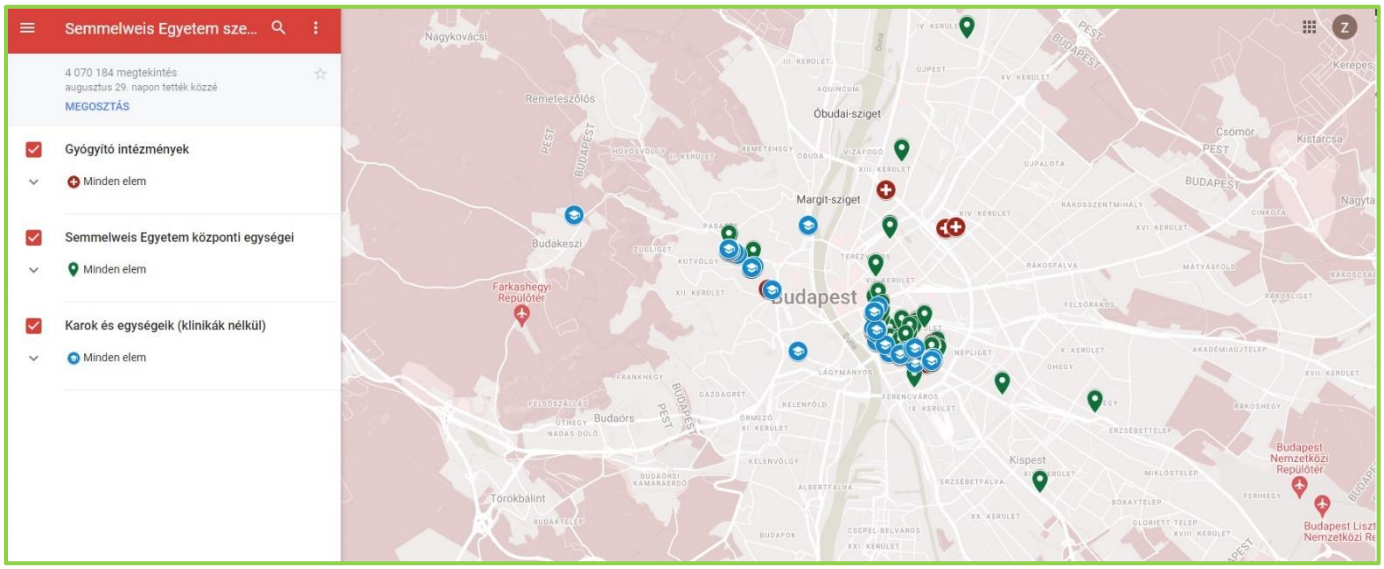

Locations of the University's buildings

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Energy and climate change

The heating and hot water needs of the university buildings are served partially with gas-fired boilers, partially with renewable energy, and partially via purchased services.

Solar energy is utilized with solar panels placed on the roofs of 5 different buildings. In the selection of the buildings and the design of the power plants, the orientation and static load capacity of the roof surfaces, the shadow effects, the building's electricity demand, and the maximization of the expected solar energy yield were considered. The power plants were handed over in May and July 2018. The realized output is 408 kW.

In 2021, the total output of the panels was **371.906 kWh.**

Total **electricity** consumption: **32.437.435 kWh.**

The proportion of renewable energy from direct sources: **1,1%.**

In 2021, gas-fired boilers used **238.319 GJ** of heating value **natural gas** to serve the heating and hot water needs of buildings, which means an annual consumption of **66.199.711 kWh**.

This was supplemented by **21.455 GJ of district heat**.

In 2021, the **total energy consumption** was **104.594.132 kWh**.

Emission rate of greenhouse substances

In short, carbon footprint, which is an objective measure of the environmental effects of human activities. The amount obtained in carbon dioxide equivalent (CO2e) is directly proportional to the impact of the individual, community or society on the climate.

Indicators which were taken into account during the calculation: energy consumption, water consumption, waste production.

In 2021, the carbon footprint calculated based on these indicators were: **26.904 t**. This means approximately 1 ton of CO2e greenhouse gas emissions per university citizen in average (~2,95 kg CO2e/person/day).

In addition to the total energy consumption, the calculation was based on the University's water consumption and the quantitative and qualitative data of the produced waste.

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Waste management

All employees and students of the University strive to reduce the amount of waste generated. Where this does not make sense, reuse or utilization of its material is prioritized. Selective waste collection works at all our locations.

The **amounts of waste in 2021** were as follows::
Municipal waste: 3.970.311 kg
Separately collected paper: 402.593 kg
Separately collected plastic: 67.155 kg
Separately collected glass: 61.927 kg
Special (infectious) medical hazardous waste: 1.021.376 kg
Chemical (and other) hazardous waste: 48.681 kg

Total amount: **5.572.043 kg** waste
→ **0,61 kg/person/day**

This represents a slight increase compared to the value of 0.57 kg/person/day in 2020, but this increase can largely be attributed to the pandemic, which significantly increased the amount of special (infectious) medical hazardous waste.

About 60% of the collected municipal waste is used for energy purposes, avoiding landfill, which sits at the bottom of the waste hierarchy. The selectively collected fractions are used in their material. This is mostly implemented in the framework of public services, but approx. 20% of the annual amount is delivered by a waste management company, which collects the paper for direct use in paper mills.

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Water management

The responsible use of water can be observed continuously during the operation of the university, as far as possible. The annual water consumption in 2021 was **365.087 m^3**. For most sites, the water base is the Margitsziget water base located along the Danube to the north.
Among the actions to reduce water consumption, should be highlighted the water-saving faucets that could be found in many places already.

The quality of drinking water in Budapest is classified as good-excellent everywhere. The university's properties and the drinking water pipelines are very old, even dating back to the beginning of the last century, however, drinking water quality tests carried out by an independent, accredited laboratory in several locations in recent years prove that adequate quality drinking water flows from the taps.

The quality parameters of **the discharged wastewater** are also **monitored** by an independent, accredited laboratory twice a year based on a self-monitoring plan. This plan is approved by the authority every year, and the results of the tests are published in the framework of data provision, which are accessible to everyone via the OKIR system.
Thanks to the measures taken in previous years, limit values were exceeded in 2021 only at one location, within the margin of error.

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Transportation

The location of the University is also a primary factor in terms of transportation, with campus buildings scattered in the metropolitan environment but located at short distances.

That is why **public transport** plays a major role in transport between university buildings.

In 2021, during the pandemic, everyone have got the opportunity to use the bicycles of the community bicycle provider Mol Bubi for a nominal rental fee of 100 HUF, which made the transportation between locations much more easier.

The area available for parking within the premises is small. About 6,1% of the non-built in area is used as a parking lot, the total **size of the parking spaces: 14.486 m^2**.

The University manages 37 vehicles, **8** of those are **fully electric**. In addition to the concierge service found in every building, a Central Dispatch and Patrol Service is also responsible for the safety of university citizens. They perform their patrolling and smaller transport tasks between the university's buildings with an electric car. These cars are charged partly with mains electricity and partly with self-installed small size power plants that utilize solar energy. These small sized power plant can be found e.g. in the parking lot of the Theory Block in Nagyvárad tér.

Electric car charger, NET

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Education and research

All university citizens receive environmental protection education, so we expect them to comply with environmental protection requirements in their own area. We strive to spread environmentally conscious attitudes and behavior by publishing good examples, participating in training and sustainability campaigns.

In addition, some of the courses taught at the University emphasize some aspect of sustainability. Examples of these are: Environmental Economics, Dental Ethics, Natural Science and Methodology 1-2., Public Health - Epidemiology, The Origin of Medical Professionalism, Bioethics - Medical Ethics, Health and Society, Food Safety and Food Adulteration.

In addition, a basic course entitled **Green University - for our environment together** has been put together, which explicitly covers the topic of environmental protection and sustainability. At the beginning of the subject enrollment period, all 500 advertised places for the course were filled in a very short time.

Many university projects and programs focused on sustainability in 2021 as well. The **EUniWell project**, which prioritizes good practices and the well-being of students, was created by the alliance of Semmelweis and 6 other European universities. In 2021, the FestiWell event of the EUniWell project was held on an online platform, specifically focusing on the impact of the pandemic on well-being. Speakers from all 7 universities participating in the project examined the relationship between student well-being and the pandemic from the perspective of their own fields of expertise.

The **Green University Program** launched in the fall of 2021 also helps the employees' environmentally conscious approach. As part of this, we encourage our employees to participate in various environmental protection programs and campaigns, that we report on later on the Program's separate website (www.semmelweis.hu/zoldegyetem).

Well-being

As part of the **Family-Friendly University Program** launched at the end of 2019, Semmelweis University paid special attention to the **health and well-being of university citizens** in 2021.

Employees have the opportunity within the framework of the Program:

- to participate in various free screening tests;
- to request general medical consultation;
- to use discounted sport opportunities;
- wide variety of cultural and leisure programs are included in the offer, for which discounted tickets, passes, and participation opportunities can be requested;
- family support system is also available for parents with small children (support for starting school, kindergarten, summer camps, vacation opportunities in university resorts, etc.)

The Program also has a separate sub-page where, in addition to a detailed presentation of available services and discounts, reports on the implemented programs could be found: (https://semmelweis.hu/csaladbarat/)

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